

CALL FOR AWARDING RESEARCH FELLOWSHIPS WITHIN PROJECT GRANTS AND R&D INSTITUTIONS

1 (one) Research Fellowship (BI) for a MSc student or BSc enrolled in a non-degree course

1 Research Fellowship(s) (BI) is(are) open at the **FCiências.ID – Associação para a Investigação e Desenvolvimento de Ciências**, for the project/R&D institution “CO2PILOT/BioISI Unit”, “PTDC/QUI-QIN/0252/2021”, funded by the Fundação para a Ciência e a Tecnologia, I.P./MCTES through national funds (PIDDAC) under the programme PROJETOS DE INVESTIGAÇÃO CIENTÍFICA E DESENVOLVIMENTO TECNOLÓGICO, under the following conditions:

1. **Scientific Area:** Computational Chemistry, Inorganic Chemistry
2. **Requirements for admission:** Bachelor of Science Degree in Chemistry or related fields with minimum 14/20 marks.
3. **Additional optional skills and qualifications:** Previous experience in Computational Chemistry
4. **Contracting requirements:** Presentation of the academic qualifications and/or diplomas. Enrolment in Master degree or a Non-degree Course developed in association or cooperation between a High Education Institution and one or multiple research units.
5. **Work plan:** The application of dinuclear Co(II) complexes in the molecular activation and sequestering of CO₂ via photo-reduction has been the subject of research in previous years [1-3]. This family of complexes can turn CO₂ into methane with sufficiently large reaction times. It is therefore proposed that the mechanism of transformation by these complexes be explored as their role in the catalysis is not yet widely understood. The candidate will learn to use state of the art techniques in Density Functional Theory and will use that knowledge to obtain estimates for the standard reduction potential of bicarbonate adducts, and other intermediates in order to better understand the ways to improve catalyst performance. After this stage a mechanistic re-evaluation may be carried out in view of the previous results.
[1] Angew. Chem. Int. Ed. Engl. 2017, 56 (3), 738-743. <https://dx.doi.org/10.1002/anie.201610607>
[2] Chem. Eur. J. 2019, 25, 11670-11679. <https://dx.doi.org/10.1002/chem.201901806>
[3] Angew. Chem. Int. Ed. 2018, 57, 16480-16485. <https://dx.doi.org/https://doi.org/10.1002/anie.201811010>
6. **Legislation framework:** Research Fellowship Holder Statute, in accordance with Law 40/2004, of 18 August, in its current version and the FCT Regulation for Research Studentships and Fellowships, in its current version (Reg. 950/2019 published in DR on 16th December: <https://dre.pt/application/file/a/127230968>, or at the FCT website: <https://www.fct.pt/apoios/bolsas/regulamento.phtml>), and FCiências.ID Fellowship Regulation, as approved on 12th May 2020 (available at [Regulamento de Bolsas de Investigação Científica da FCiências.ID](https://www.fciencias.id/regulamento-de-bolsas-de-investigacao-cientifica-da-fciencias.id)).
7. **Place of work:** The work will be developed at the Department of Chemistry and Biochemistry, Faculty of Sciences of the University of Lisboa under the scientific supervision of Professor Nuno A. G. Bandeira and Paulo N. Martinho.
8. **Fellowship duration:** This position is initially opened for 6 months due to start in January 2023. The fellowship contract may be potentially renewed for 6 months, in accordance with the provisions of Regulation of Research Fellowships from the Foundation for Science and Technology, I.P.
9. **Monthly allowance:** The fellowship amounts to € 875,98, according to [table values](#) of the fellowships awarded directly by the FCT, IP. The fellowship holder will have a personal accident insurance and can ensure the

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right to social security through adherence to the voluntary social insurance scheme, if not covered by any other social protection scheme, pursuant to *Código dos Regimes Contributivos do Sistema Previdencial de Segurança Social*. The fellowship will be paid monthly by bank transfer.

10. **Evaluation and selection process:** Candidates will be assessed by CV (50%), motivation letter (25%), Interview (25%).

Applicants whose application is scored with a final classification of less than 60 points are not eligible for granting a fellowship.

11. **Selection Committee:** President of the jury: Nuno A. G. Bandeira; members: Paulo Nuno Martinho, Sara Realista; alternate members: Ana Cristino, Rui Galhano.

12. **Publication/notification of results:** All the candidates will be notified by e-mail, sent by the call holder, with the selection meeting minutes enclosed.

13. **Deadlines:** This call for applications is open from 28/11/22 to 27/12/2022 .

14. **Application:** Applications should be sent via e-mail to nuno.bandeira@ciencias.ulisboa.pt, by attaching the following documents:

- a. Curriculum vitae - **CV may be provided in PDF or through the [CIÊNCIAVITAE](#) system;**
- b. Certificate of completion of previous degree;
- c. Motivation Letter.

15. **Time limits for the appeal procedure:** In case of negative decision, the candidates have 10 business days, after the date of announcement of the results of the candidates evaluation, to pronounce their disagreement in accordance with the *Código do Procedimento Administrativo*. Appeals against the final decision may be submitted to the Administration Board of FCIências.ID (fciencias.id@fciencias-id.pt) within 15 business days after the notification date

Note 1: The documents that prove the entitlement of the academic qualifications and diplomas, or the proof of registration in the academic degree or diploma requested on the call, can be dismissed during the application period and replaced by a declaration on their honour from the applicant. Their delivery is mandatory for the fellowship contractualization.

Note 2: Please note that - higher education degrees and diplomas awarded by foreign higher education institutions need to be recognized by a Portuguese higher education institution, pursuant to the [Decree-Law nr. 66/2018](#) (August 16) and the [Ministerial Order nr. 33/2019](#) (January 25). The presentation of the recognition certificate is mandatory for contract signature. More information can be obtained at: <https://www.dges.gov.pt/en/pagina/degree-and-diploma-recognition>.